

NATURAL RESOURCES CONSERVATION SERVICE
MONTANA CONSERVATION PRACTICE STANDARD

RANGE PLANTING (ACRE)

CODE 550

DEFINITION

Establishment of adapted perennial vegetation such as grasses, forbs, legumes, shrubs, and trees.

PURPOSES

- Restore a plant community similar to its historic climax or the desired plant community.
- Provide or improve forages for livestock.
- Provide or improve forage, browse or cover for wildlife.
- Reduce erosion by wind and/or water.
- Improve water quality and quantity.
- Increase carbon sequestration.

CONDITIONS WHERE PRACTICE APPLIES

On rangeland, native or naturalized pasture, grazed forest or other suitable locations where the principal method of vegetation management will be with herbivores. This practice shall be applied where **indigenous** or desirable vegetation is below the acceptable level for natural reseeding to occur, or where the potential for enhancement of the vegetation by grazing management is unsatisfactory.

On pastureland or cropland where the primary purpose is to convert the land use to native vegetation.

CRITERIA

General Criteria Applicable To All Purposes

Specified seeding/plant material rates, methods of planting, date of planting and/or species selection shall be consistent with documented guidance cited by Plant Materials Program, research institutions or agency demonstration trials for achieving satisfactory establishment.

Species, cultivars or varieties selected, must be compatible with management objectives and adapted to climate conditions, soils, landscape position, (e.g., aspect) and **ecological** site(s).

Montana Plant Materials Technical Note 46 (Plant Materials MT-46) contains seeding rate specifications and recommended cultivars and germplasm for use in Montana. The Montana Range Technical Note 33 (Range MT-33) contains information on species suited to specific ecological sites. Refer to that Technical Note and the specific ecological site description(s) or forage suitability group description(s) for species adapted to the areas to be planted. Ecological site and forage suitability group descriptions are in the Field Office Technical Guide (FOTG), Section II, Natural Resources Information.

For guidance on planting woody species as containerized stock, dormant pole plantings, or other means not involving the direct planting of seed, refer to Field Office Technical Guide (FOTG), Section IV—Practice Standards and Specifications for Tree/Shrub Planting (Code 612).

NRCS, MT
November 2005

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard contact the Natural Resources Conservation Service.

NOTE: This type of font (AaBbCcDdEe 123..) indicates NRCS National Standards.
This type of font (**AaBbCcDdEe 123..**) indicates Montana Supplement.

Species, cultivars or varieties selected shall provide adequate cover to control erosion by wind and/or water within an acceptable period of time.

Seedbed preparation and planting methods will be suitable to meet any special needs for obtaining an acceptable establishment of planted materials.

Planting depths, dates, seeding rates, soil amendments and fertilizer needs for establishment, minimum seed quality standards and management during the establishment period such as weed control and deferment from grazing shall be followed to enhance establishment success.

Seeding rates will be calculated on a pure live seed (PLS) basis or percent germination.

Additional Criteria to Improve Forages for Livestock

Selection of a species or combination of species shall be designed to meet the desired nutritional and palatability requirements for the kind and class of livestock.

Selection of species or combination of species shall be designed to meet the desired season of use or grazing period. **For example, to extend the green feed period throughout the growing season, plant a mixture of both cool and warm season species. To provide a higher quality diet, plant non-toxic native legumes in the mixture.**

Additional Criteria for Improved Water Quality and Quantity

Select a species or combination of species that will maintain a stable soil surface and increase infiltration.

Species that have high evapotranspiration rates, such as some woody species and phreatophytes, shall not be planted when watershed yields are the primary objective.

A mixture of shrubs and trees indigenous to the site shall be planted when riparian area, stream bank stability and water temperature criteria are important.

Additional Criteria for Improving Forage, Browse or Cover for Wildlife

Selection of planted species shall meet dietary and palatability requirements for the intended wildlife species.

Species will be selected and planted in a designed manner that will meet the cover requirements of the wildlife species of concern. **Reference Field Office Technical Guide (FOTG), Section IV–Practice Standards and Specifications for Upland Wildlife Habitat Management (Code 645), or Wetland Wildlife Habitat Management (Code 644).**

Additional Criteria to Increase Carbon Sequestration

For optimal carbon storage, select species that increase site biomass.

CONSIDERATIONS

Planting materials selected should contribute to wildlife and aesthetics when opportunities exist.

Other practices such as **Field Office Technical Guide (FOTG), Section IV–Practice Standards and Specifications for Brush Management (Code 314) or Grazing Land Mechanical Treatment (Code 548)** may be used to promote a satisfactory site preparation to **ensure** a successful range planting.

Use of certified planting materials should be encouraged, however, distance and source limitations on seed and planting stock should be considered in terms of logistics and costs.

Any special handling requirements for planting materials need to be followed for best results, (e.g., beards or awns on seed, hard seed coats, seed mixture ratios).

Where air quality concerns exist, site preparation techniques should be utilized that will minimize airborne particulate matter generation and transport.

Where wildlife management is an objective, the food and cover value of the planting can be enhanced by using an approved habitat evaluation procedure to aid in selecting plant species and providing for other habitat requirements necessary to achieve the objective.

Consider spring plantings in areas where frequent winter thawing of the soil occurs, as seeds planted during the fall may germinate during the winter and die or the seed may rot.

PLANS AND SPECIFICATIONS

For standard plantings, appropriate forms, worksheets, etc. may be used to develop specifications and documentation. Plantings that require more detailed information, may require the use of other practices prior to planting and require a specific site specification prepared.

A range planting plan will include the following information:

1. **Location map** – tract and field numbers and a map or sketch of the area to be planted.
2. **Measured acres.**
3. **Rangeland inventory information**—including ecological sites and similarity index ratings. Information as to pasture or cropland species composition and soil/site condition.
4. **Date practice is scheduled and applied.**
5. **Planned seedbed preparation and necessary weed control.**
6. **Seeding method and depth of seeding.**
7. **Erosion prediction before and after if primary purpose is for erosion control.**
8. **Mixture and seeding rate (PLS), including selected cultivars.**
9. **Seed inoculation or treatment required.**
10. **Erosion protection provided during establishment period, if needed.**

11. **Prescribed Grazing Plan, including the Feed/Forage Balance Worksheet and other useful comments as to expected forage productivity and harvest management guidelines.**

12. **Date and signature of producer and NRCS.**

The Montana Conservation Practice Specification Job Sheet for Range Planting is required for this practice.

OPERATION AND MAINTENANCE

Operation. Identify any required items needed to assist in stand establishment such as **fallowing to control weeds and store soil moisture**, mowing, burning, flash grazing and herbicides to control weeds. Address insect and disease control needs where they are likely to create establishment problems.

Implement a Prescribed Grazing Plan for plantings that will be grazed.

Maintenance. Any necessary replanting due to drought, insects or other uncontrollable event which prevented adequate stand establishment should be addressed as soon as possible. Recommendations may vary from complete re-establishment to overseeding or spot replanting. Thin stands may only need additional grazing deferment during the growing season.

REFERENCES

Calibrating a Drill. USDA Natural Resources Conservation Service, Plant Materials Technical Note MT-30, May 1985.

Fertilizer Guidelines for Montana. Montana State University, Extension Service Bulletin EB 104, March 1997.

Montana Interagency Plant Materials Handbook. Montana State University Extension Service, EB 69, April 1993.

Montana, Utah, Wyoming Weed Management Handbook, 2001 – 2002. Cooperative Extension Services, April 2001.

Native Grass Seed Production Manual.
USDA Natural Resources Conservation Service, 1996.

NRCS Montana Plant Materials Technical Note 46, Seeding Rate Specifications and Recommended Cultivars and Germplasm for All Vegetative Practices in the Montana FOTG. 2004.

NRCS Montana Range Technical Note 33. Species Suited to Planting by Ecological Site. 2005.

Species Selection Criteria for Seeding Dryland Pastures in Montana and Wyoming, Montana State University Extension Service, EB 19, September 2000.

Restoration of Woody Plants within Native Range Communities. USDA Natural Resources Conservation Service, Plant Materials Technical Note MT-31, June 1999.

Plant Materials for Acidic/Heavy Metal Contaminated Soils. USDA Natural Resources Conservation Service, Plant Materials Technical Note MT-32, June 1999.

Tips for Drilling Chaffy Grass Seed: Attention to Detail Essential, Land and Water Magazine, July/August 1997.

Users Guide to Description, Propagation, and Establishment of Native Shrubs and Trees for Riparian Areas in the Intermountain West. USDA Natural Resources Conservation Service, Plant Materials Technical Note MT-36, February 2001.

Users Guide to Description, Propagation, and Establishment of Sedges, Rushes, and Grasses for Riparian Areas in the Intermountain

West. USDA Natural Resources Conservation Service, Plant Materials Technical Note MT-37, February 2001.

USDA Natural Resources Conservation Service, Field Office Technical Guide, Section IIE8 – Technical Ecological Site Descriptions.

Rangeland Resource Unit Map–Montana, May 2005.

USDA Plant Hardiness Zone Map. USDA–ARS, Miscellaneous Publication No. 1475, January 1990.

USDA Natural Resources Conservation Service, Field Office Technical Guide (FOTG), Section IV–Conservation Practice Standards:

Brush Management (Code 314),
most current version

Pasture and Hay Planting (Code 512),
most current version

Prescribed Grazing (Code 528),
most current version

Grazing Land Mechanical Treatment (Code 548), most current version

Nutrient Management (Code 590),
most current version

Pest Management (Code 595),
most current version

Wetland Wildlife Habitat Management (Code 644), most current version

Upland Wildlife Habitat Management (Code 645), most current version